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REMARKS*Rejection under 35 USC 112, first paragraph*

Claims 1 – 3 and 5 – 22 are rejected under 35 USC 112, first paragraph, because the specification, while being enabling for select embodiments of a polymer having a cohesion parameter of between 13 and 19 MPa^{1/2}, it does not reasonably provide enablement for the breadth of polymers that may possess this characteristic.

Claims 1-3, 5-9, and 21 have been cancelled without prejudice, Applicant reserving his right to file such claims in a subsequent divisional application. Accordingly, the rejection of these claims has now been rendered moot.

There are two comments in the Final Office related to this rejection of the remaining Claims to which the Applicant would like to respond.

- A. The Office Action takes the position that there is a substantial amount of unpredictability wherein it may not be properly assumed that, just because a given polymer is a species of a broader genus of polymers favored by the Applicant, it will inherently possess the required cohesion parameter. Following this logic, the Office suggests that a practitioner of Applicant's invention would have to perform a measurement on any polymer not expressly disclosed by Applicant to have this attribute to ascertain whether it falls within the scope of the invention, which the Examiner estimates to represent an undue burden.

MPEP 2164.01(a) states:

There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy

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the enablement requirement and whether any necessary experimentation is "undue." These factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

Applicant would like to address some of the factors provided above. Regarding factor (A), Applicant believes that the scope of the claims is commensurate with the scope of the disclosure, as will be discussed in more detail below. The nature of the invention—an airbag coated with a plurality of interpenetrating polymer networks made of silicone and a second polymer—is described in numerous patent documents, including those cited by the Applicant in the present application. The Applicant will discuss in more detail how the present disclosure and claims provide predictability to the creation of the contemplated airbag coating(s), to satisfy factor (E), and Applicant further believes sufficient detail has been provided to enable one of skill in the art to practice the inventive coated airbag (factor (F)). Applicant will also address herein the issues associated with factor (H).

MPEP 2164.08 reads in part:

The determination of the propriety of a rejection based upon the scope of a claim relative to the scope of the enablement involves two stages of inquiry. The first is to determine how broad the claim is with respect to the disclosure. The entire claim must be considered. The second inquiry is to determine if one skilled in the art is enabled to make and use the entire scope of the claimed invention without undue experimentation.

It also provides the following guidance on the subject of enablement:

The Federal Circuit has repeatedly held that "the specification must teach those skilled in the art how to make and use the full scope of the claimed invention

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without 'undue experimentation'." *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993). Nevertheless, not everything necessary to practice the invention need be disclosed. In fact, what is well-known is best omitted. *In re Buchner*, 929 F.2d 660, 661, 18 USPQ2d 1331, 1332 (Fed. Cir. 1991). All that is necessary is that one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art. Further the scope of enablement must only bear a "reasonable correlation" to the scope of the claims. See, e.g., *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18, 24 (CCPA 1970).

As described in the present specification, there is a potential for improving the properties of silicone by blending silicone with another polymer. This is well established in the art (refer to factor (C) above). The most advantageous blends are achieved when an IPN is created, which results from a relatively homogeneous blend of silicone with another polymer. To create an IPN, the silicone and the other polymer must dissolve in one another. IPNs are common in the patent literature, as evidenced by the patents referenced in Paragraph [0011] of the present application. (See factors (C) and (D) above.)

Applicant has found that the best indicator of whether a given polymer will dissolve in silicone is the proximity of its cohesion parameter to that of silicone (preferably, as claimed, a cohesion parameter within about 3 MPa^{1/2} of that of silicone). Furthermore, cohesion parameters for a genus of a given polymer are generally identified over a narrow range, making them a reasonable predictor of success in combining with silicone.

Looking at the scope of the claims with respect to the scope of the disclosure, Applicant has provided a list of polymers having a cohesion parameter that is of reasonable proximity (that is, within about 3 MPa^{1/2}) to that of silicone (typically, about 16 MPa^{1/2}). The cohesion parameter proximity is what is claimed in Applicant's Claim 10. Since cohesion parameters for a given genus of polymers are predictably within a small range, the polymers found on pages 10-12 of the specification and in Claim 18 were listed with a reasonable degree of certainty that each

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would dissolve well with silicone and form an IPN suitable for use as an airbag coating. Thus, Applicant believes the scope of the claims to be commensurate with the scope of the disclosure.

Furthermore, in describing the present invention, Applicant chose polymer cohesion parameters to describe the components, not only because of the high degree of predictability of forming an IPN when a polymer having a cohesion parameter similar to that of silicone is chosen, but also because of the availability of cohesion parameter data for a broad range of polymers.

Unlike polymer characteristics such as molecular weight distribution, structure, or even product name, the cohesion parameter for a given polymer genus and for many specific polymer species is readily available in any public library setting or on the Internet. For example, Applicant included, on page 10 of the specification, a textbook that is the definitive source of data on polymer solubility parameters (i.e., *Handbook of Solubility Parameters and Other Cohesion Parameters*). However, an Internet search using the Google® search engine revealed 21,500 hits in 0.24 seconds when the term "polymer cohesion parameter" was input.

The fourth site listed in the search results (<http://www.mallee.com/parameters.html>) was a link to a website operated by Dr. Allan F.M. Barton, the author of the textbook cited previously. His website includes the following information:

In 1975 Allan Barton of Murdoch University (of Perth, Australia) introduced (*Chemical Reviews*, 75, 731, with 400 citations in *Science Citation Index*) the new encompassing term "cohesion parameter" and a new systematic cohesion parameter unit.

The new cohesion parameter terminology and unit have been adopted internationally, and his *Handbook of Solubility Parameters and Other Cohesion Parameters* (CRC Press, 1983 and second edition in 1991) has become the standard work on this subject in the chemical, pharmaceutical and polymer industries. It has 600 citations in *Science Citation Index* so far, and is still receiving about 60 citations each year.

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In the area of polymer-liquid interactions Allan Barton published a comprehensive correlation on the basis of cohesion parameters (*Handbook of Polymer-Liquid Interaction Parameters*, CRC Press, 1990).

The Examiner is under the impression that a measurement would have to be performed on each specific polymer to determine whether it falls within the scope of the claims. The wealth of publicly available data on polymer cohesion parameters makes such measurements unnecessary, thereby removing the "undue burden" alleged in the Office Action. Because data on cohesion parameters is readily available, one of skill in the art could easily predict whether a particular polymer is suitable for incorporation with silicone to form an IPN and whether it falls within the scope of the present claims.

Accordingly, Applicant believes he has satisfied the requirement that "one skilled in the art be able to practice the claimed invention, given the level of knowledge and skill in the art."

B. The Examiner also continues to believe that, in those instances where a specific product, or species, of a polymer was mentioned in concert with a disclosed genus, only that species possesses the required attributes.

As described above, Applicant notes that the cohesion parameter of a particular polymer class is representative of the various species within that class. For this reason, the particular product names listed in the Table on pages 10-12 of the specification are merely specific examples of commercially available products (i.e., species) within a given polymer class. It is Applicant's contention that those of skill in the art are likely to understand the cohesion parameters, especially since the definitive textbook on these values is provided.

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For these reasons, Applicant believes these amendments and arguments sufficient to alleviate the Examiner's concerns and to overcome the rejection based on 35 USC 112, first paragraph. Accordingly, Applicant hereby respectfully requests the withdrawal of the rejection.

* * *

Rejection under 35 USC 102

Claims 1 – 3 and 5 are rejected under 35 USC 102(e) as being anticipated by Kim et al. (US Patent Application Publication No. 2004/0063803) for the reasons set forth in the previous Office Action.

Claims 1 – 3 and 5 are rejected under 35 USC 102(b) as being anticipated by Zolnitsky (US Patent 5,648,426) for the reasons set forth in the previous Office Action.

Applicant has cancelled Claims 1 – 3 and 5, thereby obviating these rejections.

* * *

The Examiner has indicated that Claims 6 – 20 would be allowable if rewritten or amended to overcome the rejection(s) under 35 USC 112, first paragraph, as set forth in the Office Action.

Applicant has cancelled Claims 6 – 9.

Applicant has provided arguments in support of Claims 10 – 20 and 22 to overcome the rejection under 35 USC 112, first paragraph; and to clarify the intended scope of the pending Claims. Applicant believes the application now stands in condition for allowance.

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Applicant further wishes to point to a section of MPEP 2164.08, which states:

If a rejection is made based on the view that the enablement is not commensurate in scope with the claim, the examiner should identify the subject matter that is considered to be enabled.

If, after careful consideration of the arguments presented herein, the Examiner remains unconvinced of the patentability of the pending claims, then the Examiner is invited to telephone the undersigned to discuss the application and resolve any remaining issues. Further, the Applicant hereby invites the Examiner to identify subject matter that he considers to be enabled, so that prosecution of the present application may be expedited.

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CONCLUSION

For the reasons set forth above, it is respectfully submitted that the rejections have been traversed and that a formal Notice of Allowability should be issued for the remaining claims.

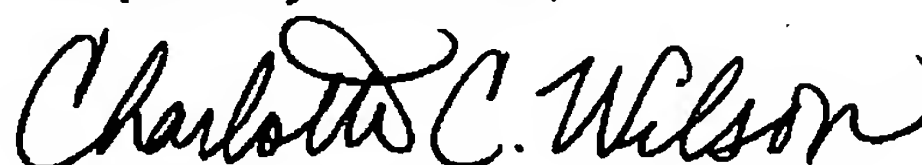
Should any issues remain after consideration of this Amendment and accompanying Remarks, the Examiner is invited and encouraged to telephone the undersigned in the hope that any such issue may be promptly and satisfactorily resolved.

It is believed that no fee is owed with the present submission. In the event that there are fees associated with the submission of these papers (including extension of time fees), authorization is hereby provided to withdraw such fees from Deposit Account No. 04-0500.

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Respectfully submitted,



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